

WHAT IS CLAIMED IS:

1. An automatic balancing device comprising:
  - a hollow housing case body rotated with a rotary body and having an annular space formed inside of the hollow housing case body;
  - a plurality of balance balls accommodated in the annular space of the hollow housing case body in a freely movable manner so as to cancel an imbalance of the rotary body; and
  - a film of a volatile rust preventing agent formed on a surface of the plurality of balance balls.
2. The automatic balancing device according to claim 1, wherein the annular space of the hollow housing case body in which the balance balls are accommodated is formed in a sealed state and the volatile rust preventing agent is contained in a vaporized state in the sealed annular space.
3. The automatic balancing device according to claim 1, wherein the balance ball are formed of chrome steel.
4. The automatic balancing device according to claim 1, further comprising a magnet body disposed in a space formed in the hollow housing case body, and the balance balls are respectively formed with steel having a magnetism, the magnet body exerts magnetic action so that the steel balls can be repulsive to each other, the space in which the magnet body is disposed and the annular space in which the balance balls are accommodated are in communication with each other, and the magnet body is impregnated with the volatile rust preventing agent.
5. An automatic balancing device comprising:
  - a hollow housing case body rotated with a rotary body and having an annular space formed inside of the hollow housing case body;

a plurality of balance balls accommodated in the annular space of the hollow housing case body in a freely movable manner so as to cancel an imbalance of the rotary body; and

a film of a volatile rust preventing agent formed on at least a surface on which the plurality of balance balls move.

6. The automatic balancing device according to claim 5, wherein the film of the volatile rust preventing agent is formed on nearly an entire surface of the annular space of the hollow housing case body.

7. The automatic balancing device according to claim 6, wherein the annular space of the hollow housing case body in which the balance balls are accommodated is formed in a sealed state.

8. A manufacturing method for an automatic balancing device comprising:  
providing a hollow housing case body rotated with a rotary body and having an annular space formed inside of the hollow housing case body;  
cleaning a plurality of balance balls immersed in a rust preventive oil;  
placing the balance balls in an atmosphere of a volatile rust preventing agent;  
forming a film of the volatile rust preventing agent on a surface of the plurality of balance balls; and  
putting the balance balls into the annular space of the hollow housing case body.

9. The manufacturing method for an automatic balancing device according to claim 8, further comprising forming the film of the volatile rust preventing agent on the surface of the plurality of balance balls at a time of drying the balance balls after cleaning, which is in an easy reaction state.

10. A manufacturing method for an automatic balancing device comprising:

providing a hollow housing case body rotated with a rotary body and having an annular space formed inside of the hollow housing case body;

providing a plurality of balance balls made with steel and having a magnetism;

providing a magnet body for exerting magnetic action so that the balance balls can be repulsive to each other;

impregnating a volatile rust preventing agent in the magnet body; and

disposing the magnet body impregnated with the volatile rust preventing agent in a space communicated with the annular space in which the balance balls are accommodated.

11. The manufacturing method for an automatic balancing device according to claim 10, further comprising:

cleaning the balance balls immersed in a rust preventive oil;

placing the balance balls in an atmosphere of a volatile rust preventing agent;

forming a film of the volatile rust preventing agent on a surface of the balance balls; and

putting the balance balls into the annular space of the hollow housing case body.

12. The automatic balancing device according to claim 1, wherein the hollow housing case body includes an upper ring-shaped annular member.

13. The automatic balancing device according to claim 5, wherein the hollow housing case body includes an upper ring-shaped annular member.

14. The automatic balancing device according to claim 12, wherein the upper ring-shaped annular member has a cup shape.

15. The automatic balancing device according to claim 13, wherein the upper ring-shaped annular member has a cup shape.

16. The automatic balancing device according to claim 12, wherein the upper ring-shaped annular member is made of a resin material.

17. The automatic balancing device according to claim 13, wherein the upper ring-shaped annular member is made of a resin material.

18. The automatic balancing device according to claim 1, wherein a height and width of the hollow housing case body is larger than a height and width of the plurality of balance balls.

19. The automatic balancing device according to claim 5, wherein a height and width of the hollow housing case body is larger than a height and width of the plurality of balance balls.

20. The manufacturing method for an automatic balancing device according to claim 8, further comprising forming a height and width of the hollow housing case body larger than a height and width of the plurality of balance balls.